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What We Know about Crowding and Visitor Experiences: White Paper

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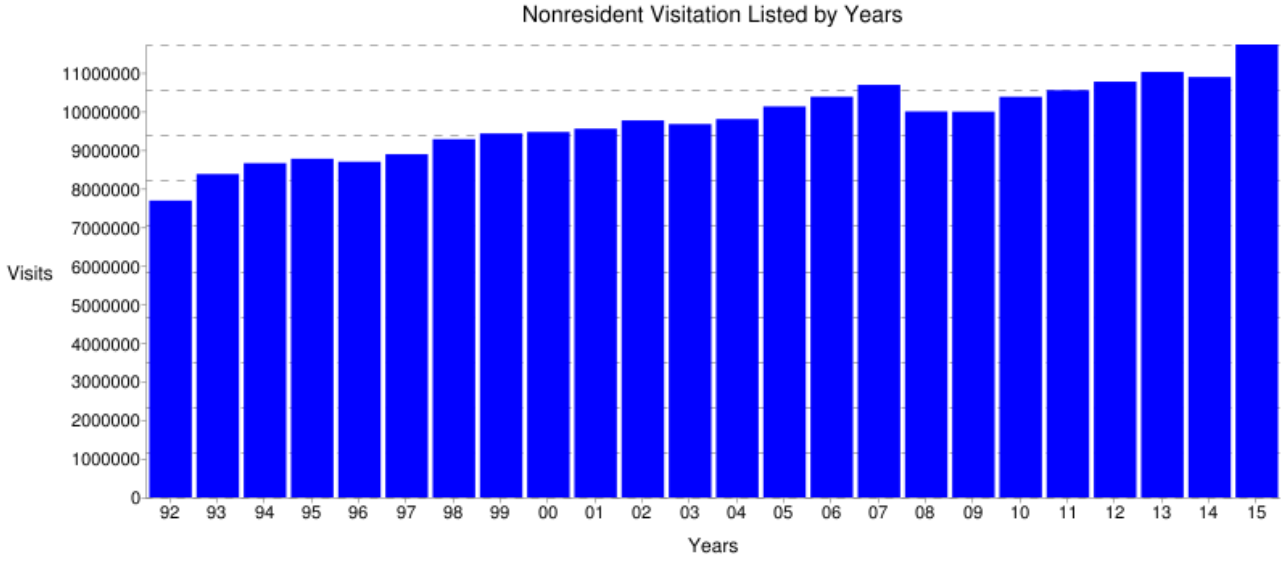
Questions and concerns have been raised about the crowding issues in Yellowstone and Glacier National Parks, as well as the perception of crowding on Montana's rivers, trails, and other public resources. Crowding, or the perception of crowding, is both an individual evaluation and a cultural conditioning not easily understood from the psychological perspective. This white paper provides a summary of crowding research to help clarify perceptions of, reactions to, and solutions for crowding in natural areas.

Problem perception: 1). Crowding on public lands in Montana is becoming a problem in terms of return visits and satisfaction at the sites. 2). Montana residents perceive crowding due to nonresidents visiting the state.

Background: It is important to first understand trends in nonresident visitation to Montana, national park visitation, and residents' attitudes about tourism in Montana.

Nonresident visitation in Montana has increased 53% between 1992 and 2015 (Figure 1). The single year 8% increase in 2015 is the highest percent increase since 1992 in any one year. The average yearly increase is 2%.

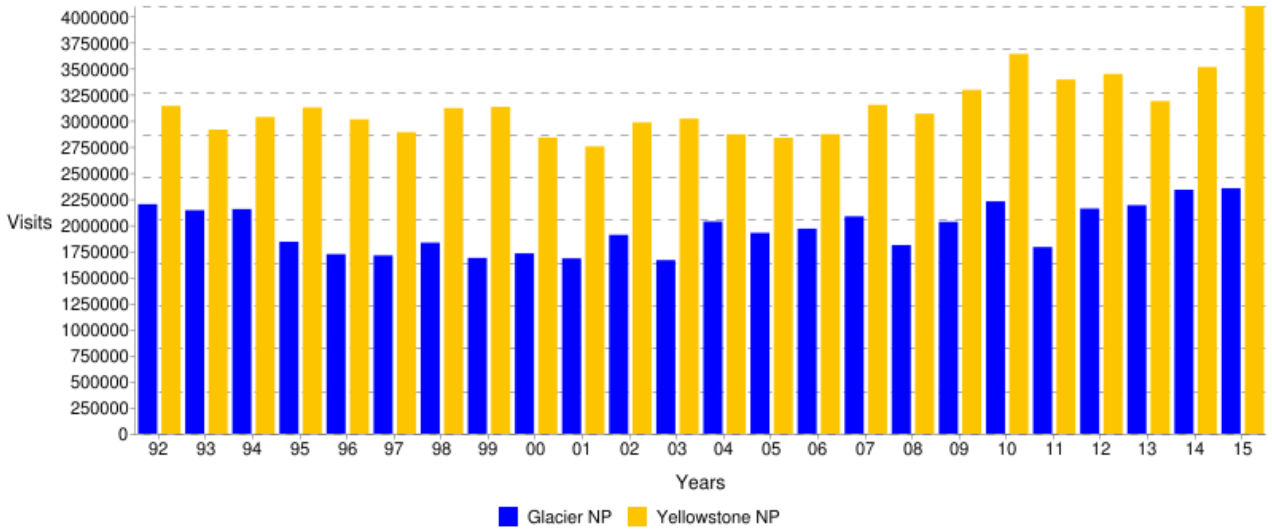
Figure 1: Nonresident Visitation 1992-2015



*Data Source: Institute for Tourism and Recreation Research

Similarly, visitation in the two large national parks in Montana also increased through the same timeframe of 1992- 2015, albeit not as high as the state increase (Yellowstone +30%; Glacier +7%). These two parks show notable differences in visitation increases with Yellowstone experiencing significantly larger scale increases than Glacier (Figure 2). It is also notable that there is not a straight trend line to follow. Visitation for these parks goes up and down throughout the 24 year time period. Factors contributing to these yearly fluctuations include weather conditions, opening/closing of roads, road construction, and regional/national economies to name a few.

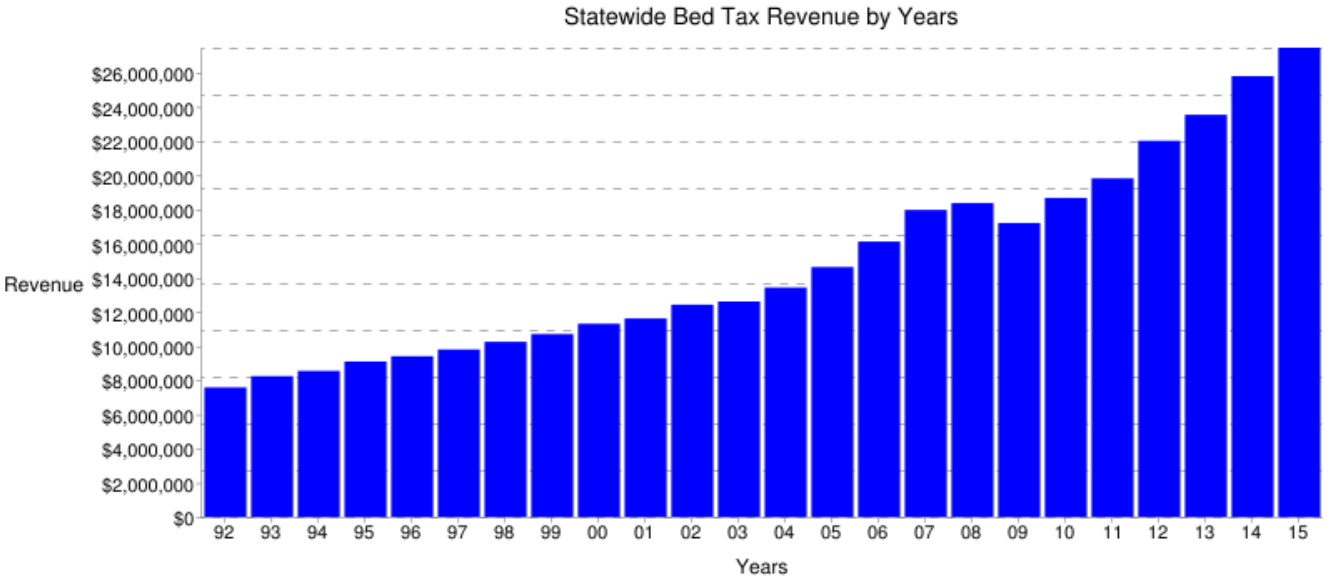
Figure 2: Glacier and Yellowstone National Park visitation: 1992-2015



*Data Source: National Park Service Public Use Statistics Office

Figure 3 shows the trend in statewide bed tax collections from 1992-2015. Increases in room rates, additional rooms available, and marketing of Montana to nonresident visitors accounts for much of the 262% increase. However, the increase also relates to demand as seen through visitation to both parks and the state as a whole. Demand in terms of rooms sold between 2003-2015 showed a 2% average increase in that 13 year timeframe.

Figure 3: Montana Statewide Bed Tax Collection: 1992-2015

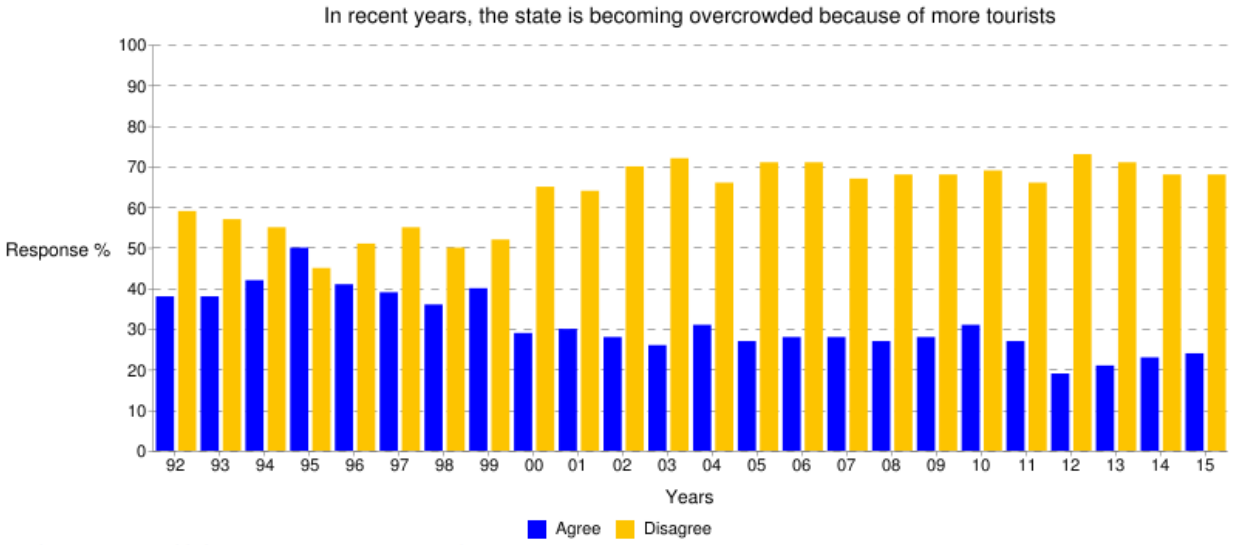


*Data Source: MT Department of Commerce, Office of Tourism

Finally, ITRR routinely conducts annual surveys on resident attitudes. One question relates directly to the crowding perception and the other relates to overall attitude in regards to the benefits and negatives of Montana's tourism. As shown in both Figures 4 and 5, resident attitudes, since collection started in 1992, are

positive towards tourism. In their perception of crowding, only in 1995 did more residents agree that crowding was happening because of tourism. All the other years show that residents disagree with the crowding issue (Figure 4). In 1992, 59% of residents disagreed that the state was becoming overcrowded, but by 2015 as many as 68% of residents disagreed with the same statement, indicating either that the perception of crowding had decreased or that tolerance toward crowding had increased.

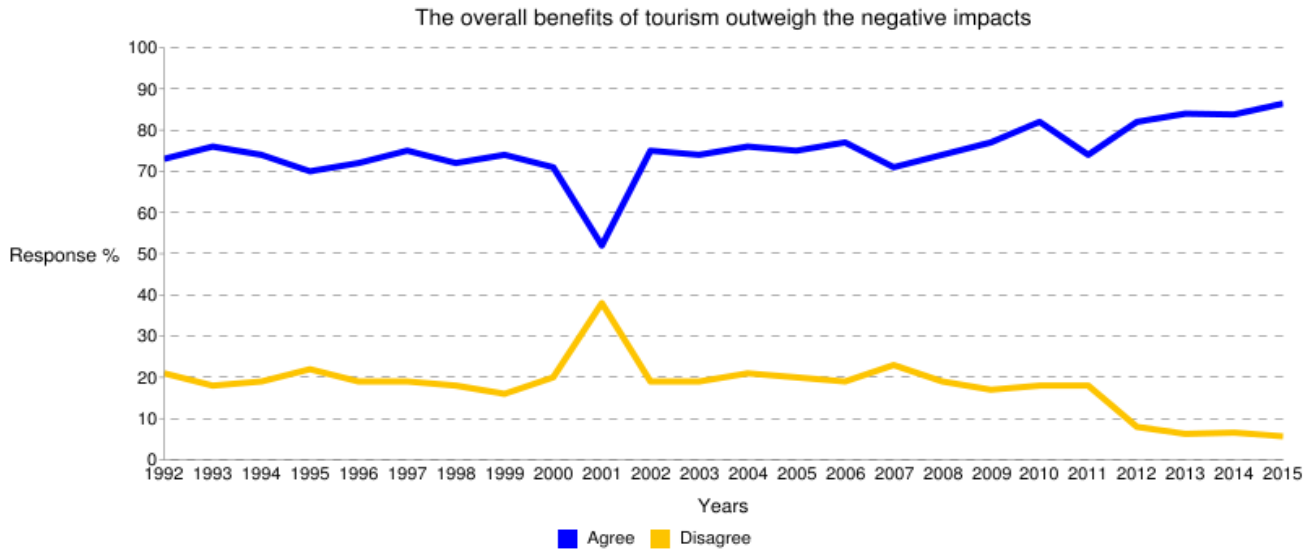
Figure 4: Resident Attitudes Toward Crowding Due to Tourism: 1992-2015



*Data Source: Institute for Tourism and Recreation Research

The general attitude question asked residents if the overall benefits of tourism outweigh the negatives. The overwhelming response in the 24 year period has always been positive. Figure 5 shows that the only time it fluctuated significantly was immediately following the terror attack on September 11, 2001. Even then, the perceived benefits were slightly higher than the negatives.

Figure 5: Resident Attitudes Toward the Benefits vs Negatives of Tourism in Montana



*Data Source: Institute for Tourism and Recreation Research

The above graphs paint a picture that tourism has increased in Montana in the past 24 years, as well as at the two major destinations in Montana (Yellowstone and Glacier). Resident attitudes towards this increase in visitation has not changed to a negative feeling about tourism and crowding. Yet, concerns about visitor satisfaction due to perceived crowding remain. The following summarizes the literature written on crowding over the years.

Research on crowding, perceptions of crowding, and mechanisms to deal with crowding began in earnest in the early 1970's. The seminal psychological experiment by Daniel Stokols and others in 1972 –'73 provided mixed results related to crowding perception and behavior. This caused the researchers to suggest that social and personal variables mediate the perception of the environment as well as the experience of crowding. In their study, they observed that various coping mechanisms were employed by individuals when they were put in a small, crowded room. This outlined the need to look at differences within people regarding crowding.

Following the Stokols experiment, many crowding studies focused on backcountry and wilderness environments within our natural resources and public lands. At that time, national parks and wilderness areas were perceived to be more crowded as compared to previous years causing both social and environmental impacts to the area. The first attempt to deal with the crowding issue centered on carrying capacity (the number of people that a region can support without environmental degradation), but has been difficult for managers to monitor. Numerous frameworks have since been developed in outdoor recreation to guide the management of crowding. Frameworks include Limits of Acceptable Change (LAC), Visitor Impact Management (VIM), and Visitor Experience and Resource Protection (VERP). Each framework relies on indicators of resource conditions and the quality of the visitor experience, and yet crowding and impacts continue to plague management.

The Recreation Opportunity Spectrum (ROS) emerged in the late 1970's as one method of dealing with crowding and resource impacts. The ROS is divided into six major management classes that range from urban to primitive and are managed based on resource impacts and visitor experiences. Both the setting and how it is managed are key to providing a quality experience as well as meeting visitor expectations of their outdoor experience. More recent research asks visitors a series of trade-off questions, i.e. pairs of alternative settings, in which the visitor must pick one over the other. This provides managers with an 'acceptable solution' to crowding and resource impacts based on visitor preferences.

Crowding research is not conducted just in outdoor settings. Indeed, crowding research focuses on retail and shopping, festivals and special events, urban areas, and tourism sites around the world. Mixed results on the effects of crowding on behavioral outcomes is rampant in the literature. Many researchers use satisfaction as an indicator of crowding (more crowded = less satisfied), yet crowding research continues to find no correlation. In fact, sometimes respondents indicate that crowding is bad but their satisfaction is still quite high. The main conclusion from these varying results is that perceived crowding can vary between situations and persons.

A summary of results regarding crowding in natural areas include:

- Some visitors are not aware of increased use at a site, and therefore crowding seems no different to them. Thus, crowding is relative to expectations, or the lack of knowing what to expect.
- First time visitors do not have a reference to a time with less crowding, so they 'accept' the current condition and are more tolerant towards crowding.
- In order of magnitude, visitors to outdoor recreation areas tend to cope with crowding through four main avenues: 1) changing their attitude/perception about crowding; 2) changing the time of day or season in which to visit, 3) going to less popular locations in the same area; and 4) not visiting the area all together. This fourth coping mechanism is the behavior done the least by visitors.

- Place attachment increases coping behaviors.
- The influence of culture on crowding norms appears to be related to crowding acceptability. Those in "contact cultures" or more socially oriented culture, such as in Asian countries, were found to be more tolerant of crowds and even less likely to enjoy areas with very few people in it.
- In some areas and activities, crowding is even desired. A key finding of a ski area research study was that downhill skiers and snowboarders prefer some level of crowding. The social atmosphere at a ski resort requires others in proximity.

Specifically, research suggests crowding to be a personal evaluation based on culture, previous experience, expectations, and an inward ability to accept and change as needed. If one were to take a group of people experiencing the same thing at the same place and time, their evaluation of crowding would be as diverse as the people in the experience. Most importantly, it appears that crowding perception is site specific. Therefore, taking research results and applying them to other parks or outdoor areas may not work. Each site is as diverse as there are outdoor sites to visit and recreate in. Solutions, then are site specific and visitor specific.

Solutions to crowding. In areas such as the front country in parks or highly developed recreation sites, one researcher suggests that management of crowding should focus on "limiting rude, depreciative, and dangerous behavior" rather than trying to preserve certain types of psychological experiences. It does appear through the literature that people who act in disorderly ways (e.g. littering, getting too close to wildlife, loud voices, or other detrimental environmental impacts) bothered other visitors more than the number of visitors. This suggests some possible solutions: 1) More ranger 'boots on the ground' for educational and control purposes; 2) A new way of educating visitors before entering the area, or 3) Additional fines to visitors.

Researchers also recommend that sufficient space for the activities be pursued. In unique places like Yellowstone and Glacier, it is not possible to increase the number of geysers or expand the Going-to-the-Sun-Road. One cannot control where and when the grizzly bears hang out by the roadway. The YNP rangers' attempts to broadcast from their vehicle to keep moving (no stopping on the roadway) has not worked. Visitors are here to see that bear and get their wildlife photo. However, some solutions to sufficient space for activities such as wildlife watching would be to highlight areas outside the national parks that have equal wildlife opportunities such as the National Bison Range, the multitude of wildlife refuges including the CM Russell Wildlife Refuge, and various other hot spots within Montana. Such actions serve to disperse the visitors and reduce concentration in 'hot spots' highly susceptible to crowding.

Since crowding is site and visitor specific, it seems logical that managers of parks and outdoor recreation areas be allowed to enact management techniques as they experience visitor behavior becoming unacceptable and environmental conditions deteriorating. These managers know their landscape and situation better than most and should be able to decide what is good for the land and what may work for most people. Surveying visitors about trade-offs is one way to get the management decisions started. Other possible ways to determine limits is to assess the capacity of the current infrastructure. If adding roads, campgrounds, and visitor facilities is not part of the growth plan, then what the roads can handle structurally is an indicator of too many people. Additionally, safety measures due to emergency situations could provide a limiting number. For example, how quickly a park can evacuate all visitors to Glacier and Yellowstone when a wildfire explodes is influenced by the number of vehicles in the park. Knowing the acceptable evacuation time can help managers determine the maximum number of vehicles allowed for safety measures.

Conclusions. Back in the early 1970's when crowding became a research topic, the Baby Boom generation was in their 20's experiencing the public lands en masse. Now, in 2016, Millennials have outnumbered the Baby Boomers and are also enjoying our public lands for recreation, vacation, and solitude. The world has become

more open to outsiders and the world population continues to grow. Visitation to Montana, as well as Yellowstone and Glacier National Parks, continues to increase, and yet the majority of visitors are still satisfied with their visit. Cultural differences, acceptance of change, and moving a visit to a different time of year or time of day are all explanations as to why people are still happy with their visits. We cannot, nor would we advocate closing Montana's borders; however, it would be wise for natural resource managers, tourism promoters, guides and outfitters, others in the tourism and recreation industry, and developers to come together, discuss, collaborate, and strategize on how to keep the landscape livable for all species as well as welcoming for future generations of visitors and residents. The end product of recreation and tourism management is the experience people have. That experience is affected by resource impacts and visitor behavior.

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